

ENERGY
STEP CODE
BUILDING BEYOND THE STANDARD

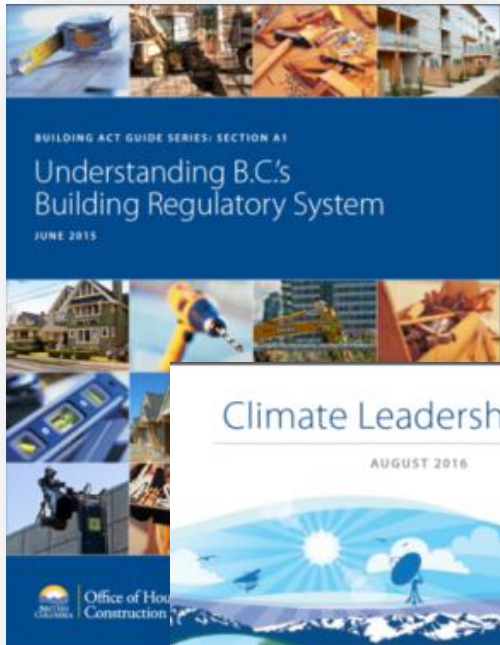


September 25, 2017

Zachary May

A/Director, Policy and Codes Development
Building and Safety Standards Branch
Ministry of Municipal Affairs and Housing

Two Provincial Initiatives Set the Stage



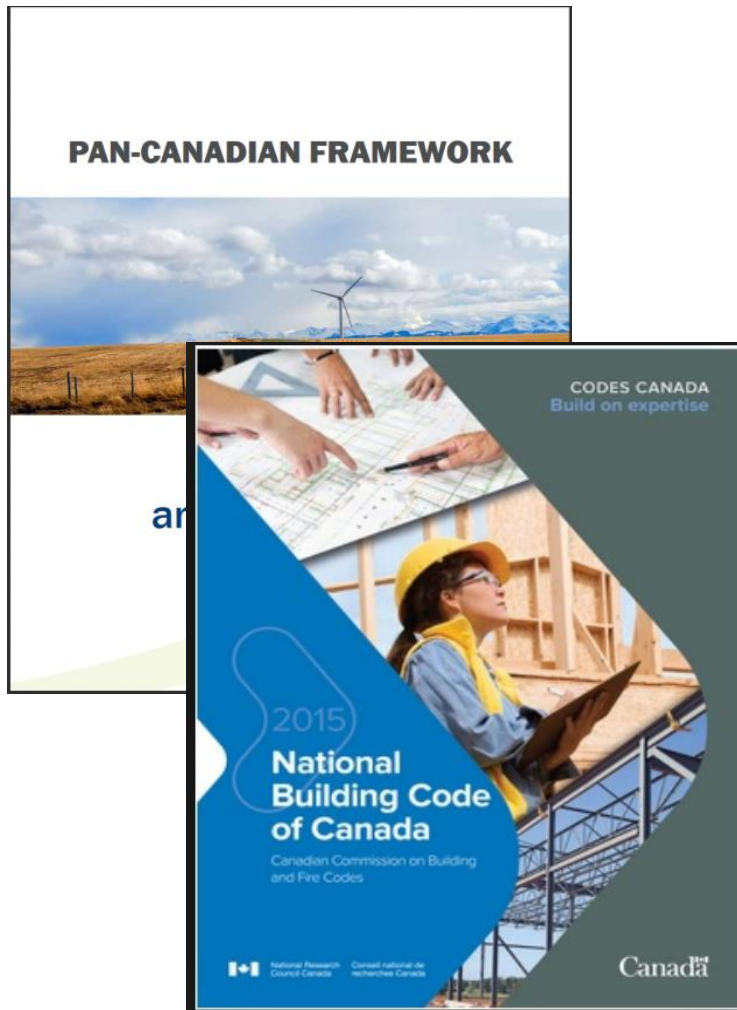
Building Act

- Consistency, Competency & Innovation
- December 2017 marks the end of local building requirements in bylaws.

Climate Leadership Plan

- Establishes a target that all new construction will be net-zero ready by 2032.

National Policy Framework



Pan Canadian Framework

- Net-zero energy ready by 2030
- Create plan for existing buildings by 2022

National Building Code of Canada

- Introduce a roadmap by 2020
- Codes Canada and NRCCan actively supporting the work in BC

Local Government Approaches to Energy Efficiency

Eliminating the Patchwork:

- Local government adopted a wide range of programs and approaches to address building energy efficiency.
- Development industry struggled to stay on top of these requirements.
- BC Energy Step Code offers a common standard for achieving building energy goals.



Energy Efficiency Working Group



PROVINCIAL GOV.

BUILDERS & DEVELOPERS

LOCAL GOVERNMENTS

TRADES & PROFESSIONALS

NGOs



UTILITIES

A Focus on Performance



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Part 9 | Step 1: Enhanced Compliance

2017 -----> 2032

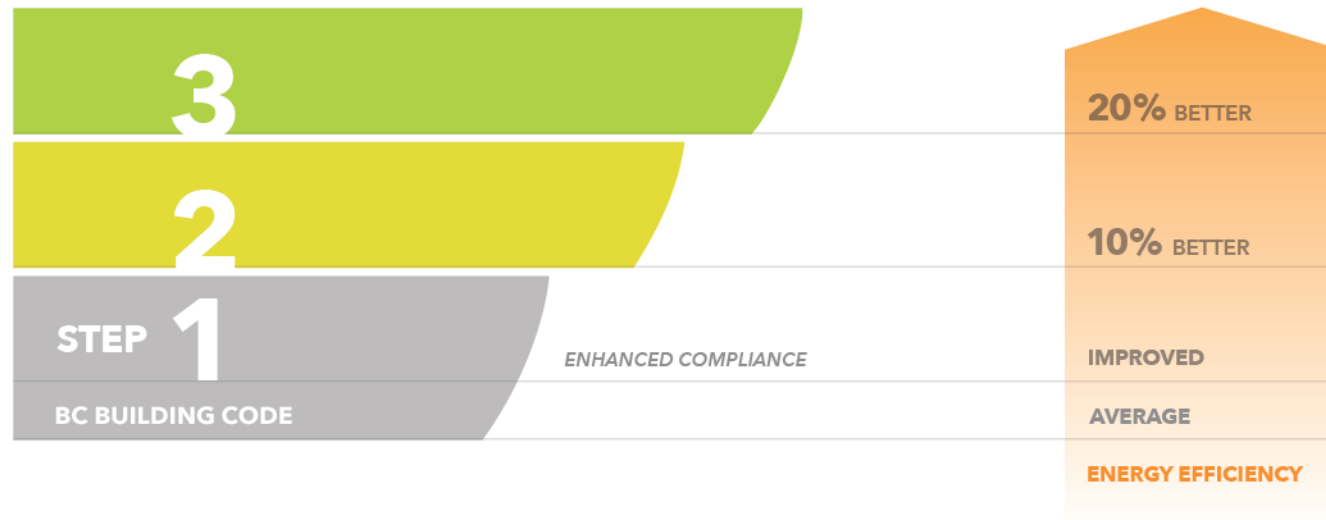
BC BUILDING CODE

AVERAGE

ENERGY EFFICIENCY

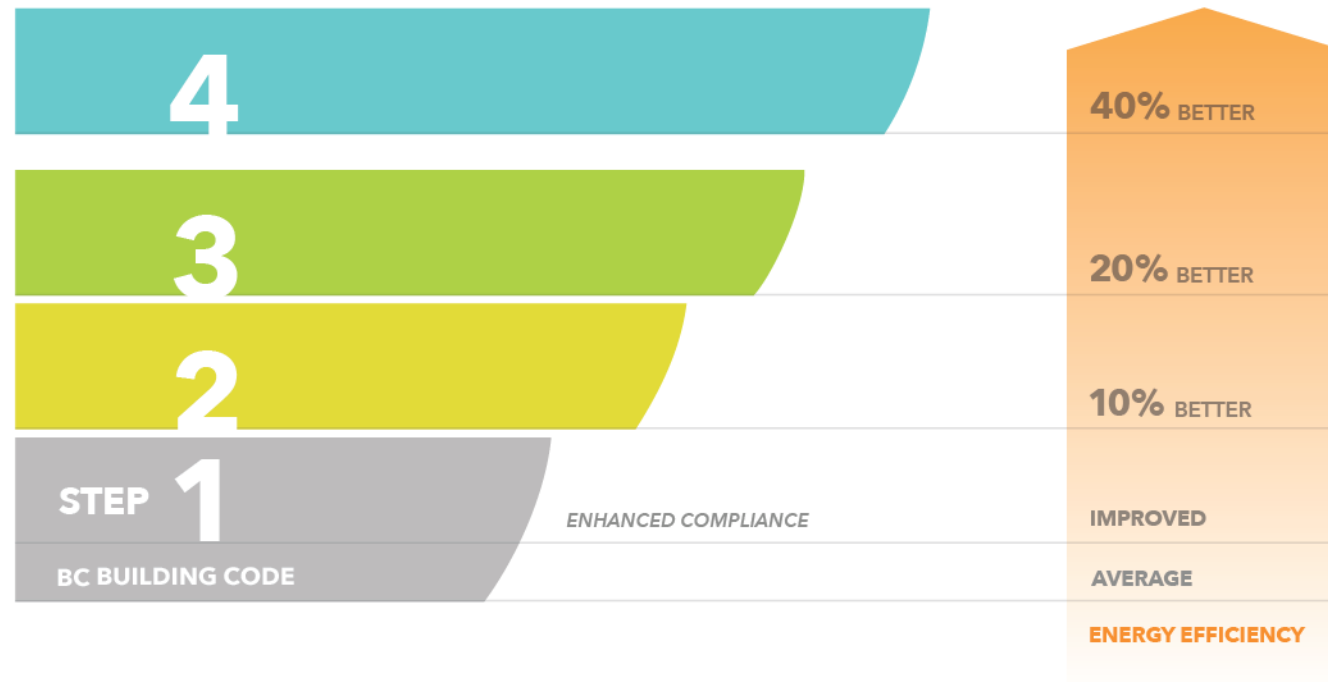
Part 9 | Steps 2 and 3: The Lower Steps

2017 -----> 2032



Part 9 | Step 4: The Threshold to the Upper Steps

2017 -----> 2032



Part 9 | Step 5: Net Zero Ready New Construction



Part 3: High Performance Large + Complex Buildings

PATHWAY TO 2032: PART 3 (WOOD-FRAME RESIDENTIAL)



Part 3: High Performance Large + Complex Buildings

PATHWAY TO 2032: PART 3 (CONCRETE RESIDENTIAL)



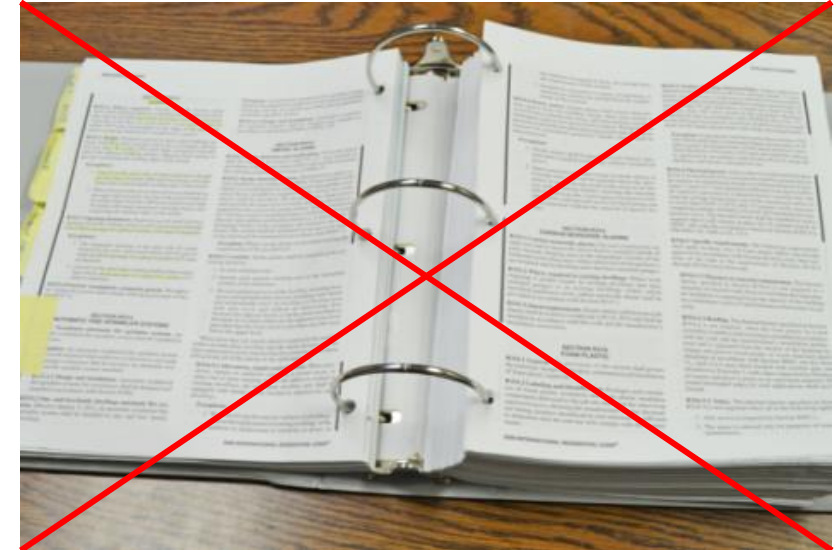
Performance Compliance



Energy modeling



Air-Tightness Testing

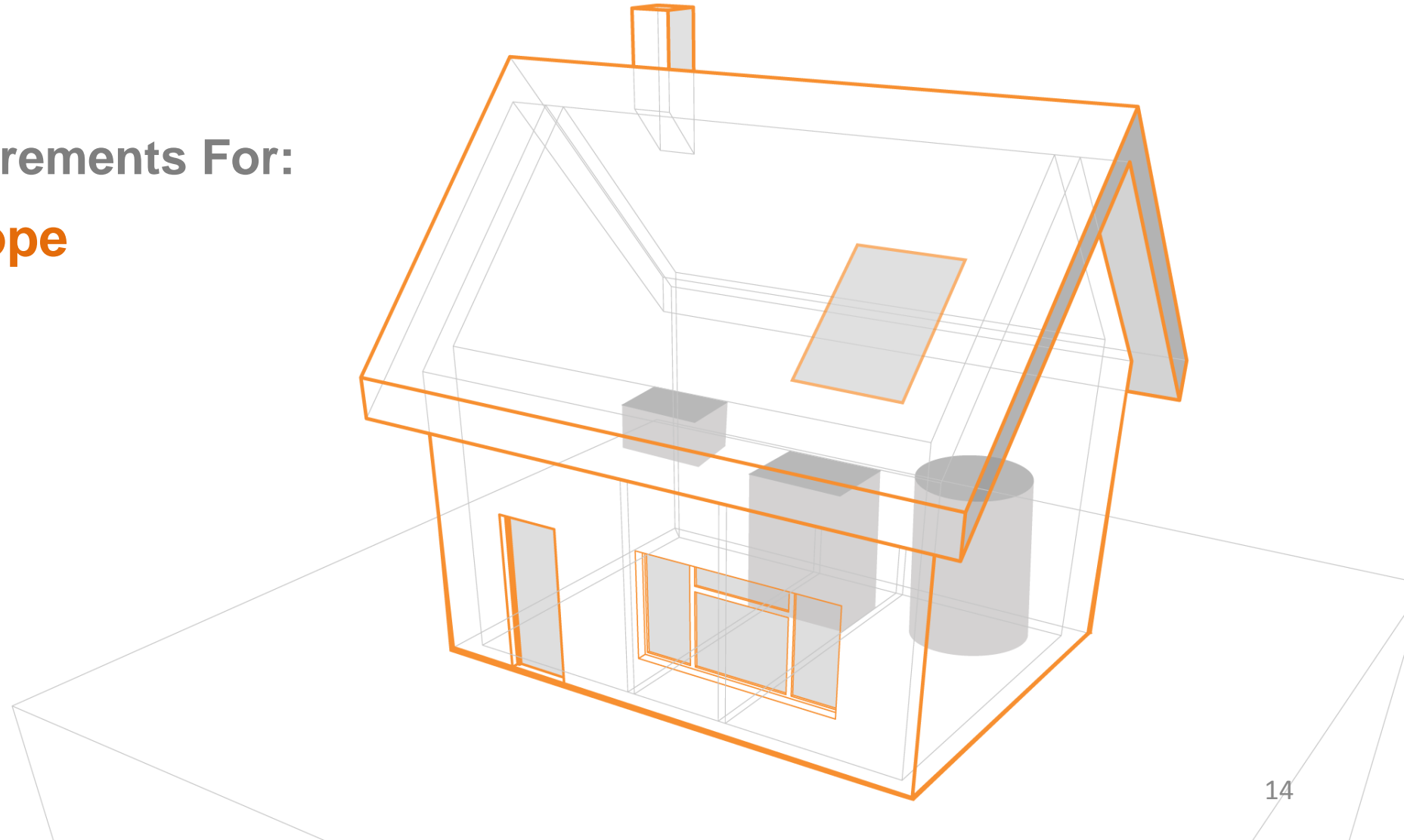


No Prescriptive Requirements

What Does the BC Energy Step Code Measure?

Performance Requirements For:

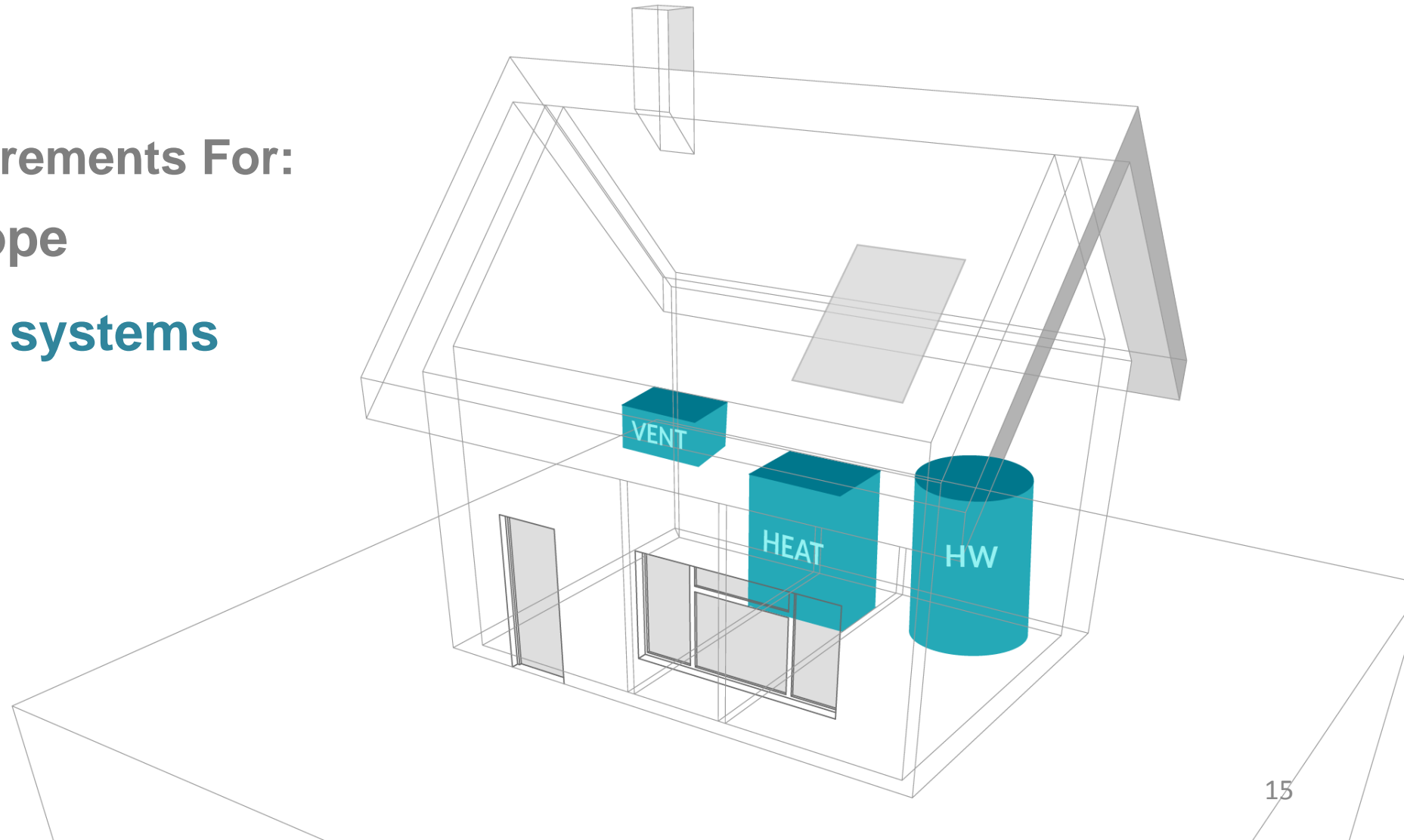
✓ **Building envelope**



What Does the BC Energy Step Code Measure?

Performance Requirements For:

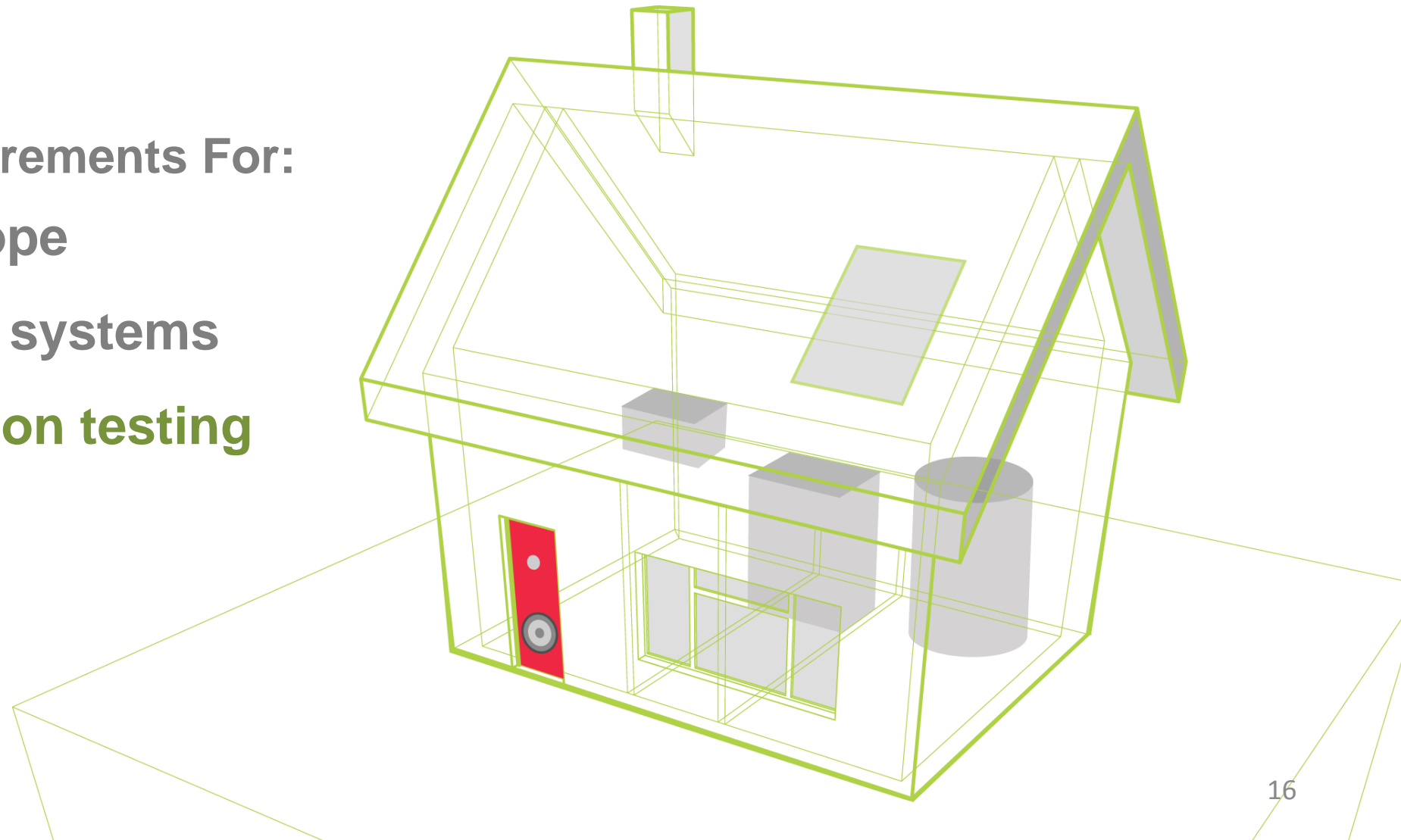
- ✓ Building envelope
- ✓ Equipment and systems



What Does the BC Energy Step Code Measure?

Performance Requirements For:

- ✓ **Building envelope**
- ✓ **Equipment and systems**
- ✓ **Post-construction testing**
 - Airtightness



Building Envelope Efficiency Metrics

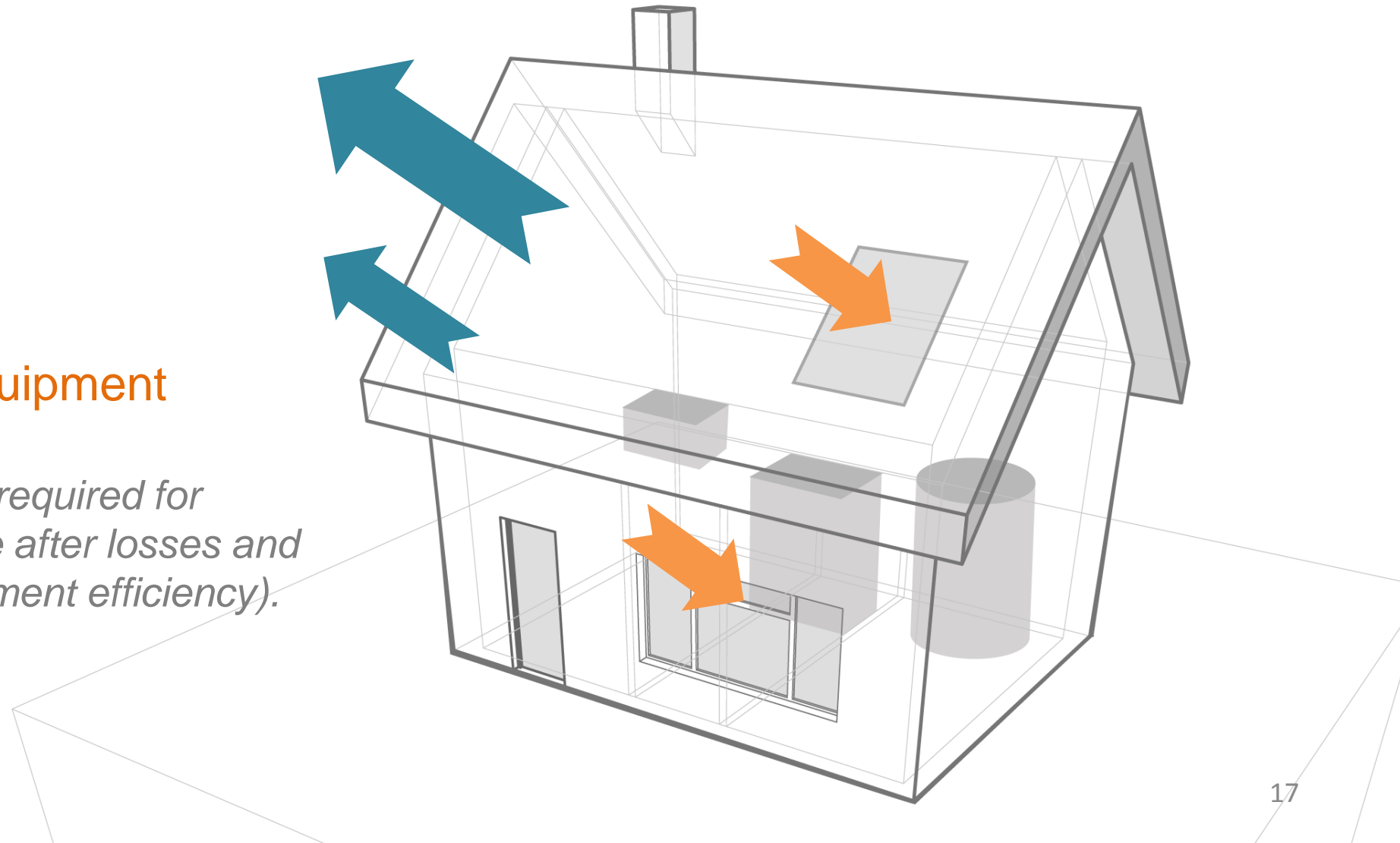
Losses

- Air tightness
- Insulation

Gains

- Solar gain
- People and equipment

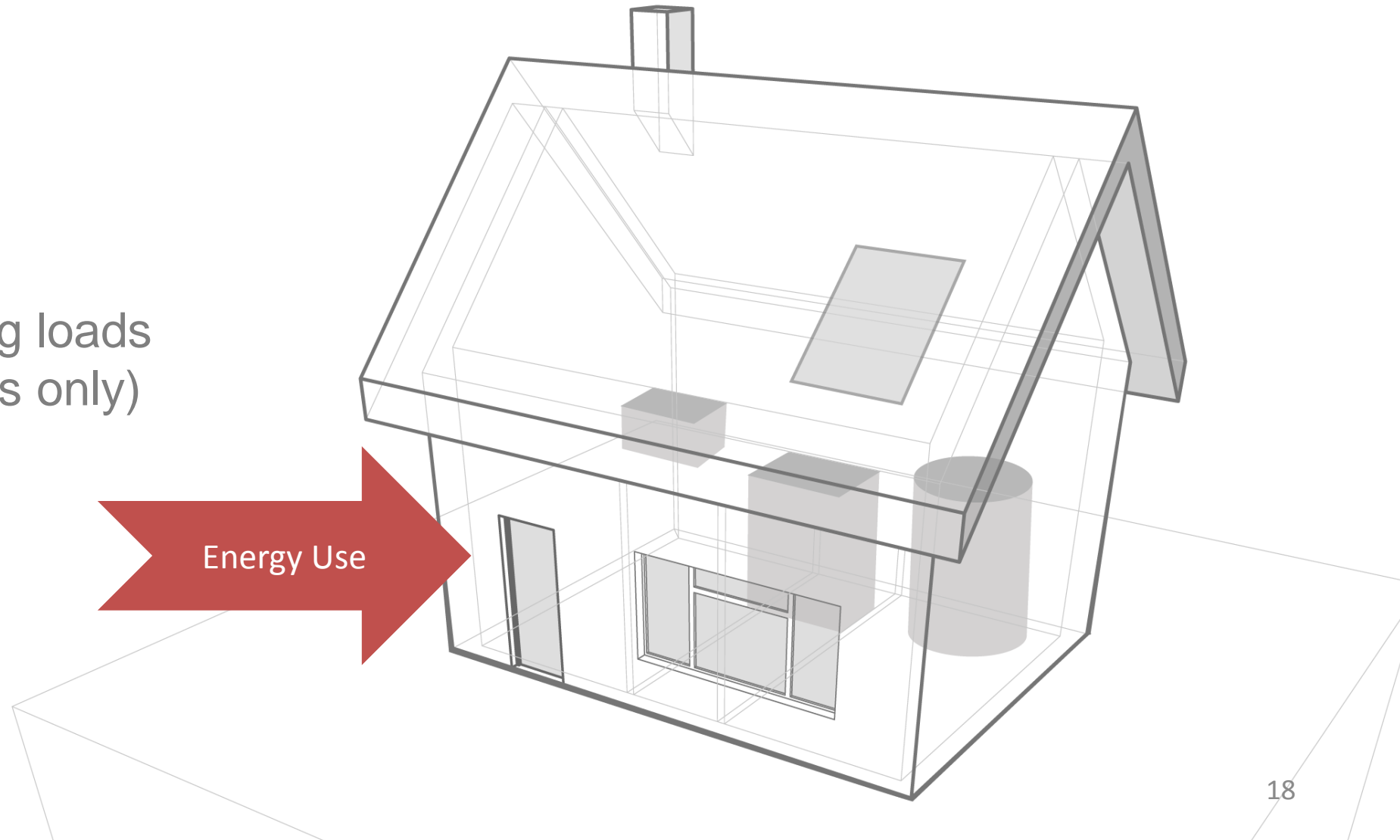
Units of heat energy required for constant temperature after losses and gains (ignores equipment efficiency).



Equipment Efficiency Metrics

Energy Use

- Heat
- Water heating
- Ventilation
- Lights and plug loads
(large buildings only)



Alignment With Energy Efficiency Incentive Programs

Sample Programs:

City of North Vancouver



City of Richmond
City of Surrey



Sparwood, Invermere, Kimberley
Langley, Saanich



Resort Municipality of Whistler
City of New Westminster



2017



2032



Putting into Practice: Possible Implementation Approaches

	A LOCAL GOVERNMENT	B ALL LOCAL GOV. IN REGION	C LOCAL GOVERNMENT
5			MAJOR DENSITY BONUS INCENTIVE & DESIGN COMPETITION
4			MAJOR DENSITY BONUS INCENTIVE
3	INCENTIVE BASED PROGRAM	TELEGRAPH INTENT TO MAKE REGION-WIDE BYLAW IN 4 YEARS	REZONING POLICY
2			BUILDING PERMIT REBATE INCENTIVE
STEP 1		CITY-WIDE BUILDING BYLAW	CITY-WIDE BUILDING BYLAW
BC BUILDING CODE			

ENERGY EFFICIENCY

Research and Support Resources

LOCAL GOVERNMENTS

NGOs

TRADES &
PROFESSIONALS



PROVINCIAL
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BUILDERS &
DEVELOPERS

UTILITIES



Completed or Underway:

- Resource hub: energystepcode.ca
- LG Best Practices Guide
- Training and capacity assessment
- Costing study
- Local government readiness survey
- Peer network for local government staff
- Guides, webinars and presentations

Adopting the Energy Step Code

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GOVERNMENT

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1

Review resources.

2

Notify the ESCC of intent to consult and reference the BC Energy Step Code.

3

Consult, define your program details **and prepare** policies and/or bylaws.

4

Notify the ESCC once plan is approved and ready.

5

Launch and administer the BC Energy Step Code as defined for your community.

Thank You!

Questions?

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Building and Safety Standards Branch

Government of British Columbia

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